Daily Diary Report by Bid Item

Contract No.: 04-0120F4
Diary #: 1107 **Const Calendar Day:** 680 **Date:** 15-Apr-2014 **Tuesday**
Inspector Name: Brignano, Bob **Title:** Transportation Engineer
Inspection Type:
Shift Hours: **Break:** **Over Time:**
Federal ID:
Location:
Reviewer: Schmitt, Alex **Approved Date:** **Status:** Submit

04-0120F4
04-SF-80-13.2/13.9
Self-Anchored
Suspension Bridge

Weather

Temperature **7 AM** **12 PM** **4PM**
Precipitation **Condition** overcast am, clear pm

Working Day ☑ If no, explain:

Diary: Dispute ☐

General Comments

CCO 314, SAMPLING AND TESTING A354 GRADE BD MATERIAL:

ABF Engineer Kelvin Chen is not at work today.

On site today from VGO is Dave Van Dyke. VGO arrives on site at 0800 and leaves the site about 1200. In the afternoon, VGO produces the evening data reports. VGO also examines the wire runs for TR's 1-4 because it is now planned for another phase of the Townsend Test, with the next phase happening in those previously used test rigs. VGO notes that many of the wire connectors have had some weather damage, and the ends of the wire runs will need to be cut and spliced out. A more detailed check of the signals will need to be performed on a later date.

Crews at the Pier 7 warehouse area are working an 8-hour shift 0700 through 1530 today. Ironworkers Jared Garret and Kyle Crowley start work at the test rig site after the morning 10am break, are present for the tensioning steps, and then work the remainder of the morning and afternoon on non-CCO 314 operations elsewhere at the Pier 7 warehouse area. Portions of the shift not spent at the CCO 314 test rigs are not covered in this diary.

VGO performs reference electrode and pH checks at TR's 12 & 13 approximately 0900 to 0930. CT-METS is notified so that a note about the noise can be made with the AE data. It is noted that the reference electrode stays within 5 mV when compared with the master electrode in the pre- and post-checks. It is also noted that when checking the pH paper with the 7.00 buffer solution, the 4.0-7.0 pH paper and the 6.5-10.0 pH paper both read 6.5.

Starting after the morning break, the tensioning steps (0.70 Fu) at TR's 12 and 13 happen. Two ironworkers are present to operate the hydraulic pump and turn the nuts. VGO is present to monitor the loads being used to guide the operation. Present from CT-METS is Elijah Turner with MISTRAS personnel on the phone line continuously monitoring all AE data on the two channels for each test rig during the jacking operation and the water/air venting. Present from the DJV are Hayat Tazir and Ashley Takata during the jacking operation. Also present for the jacking step is Mark MacDonald from ABF.

Test Rig #12 (2008 Rod, ID S2-A8, Heat MJF-32, Top) Jacking Step:
This is the 7th jacking step and the rod is being jacked to 0.70 Fu. The post-seating of the nut target is 585.060 +10/-0 kips. The expected hydraulic pressure at this locked off force is 3,400 psi. Based on the previous jacking step (0.65 Fu), the expected seating loss is at least 41 kips, meaning the initial jacking target is ~630-640 kips. Jacking is started at about 1025. At 3,400 psi hydraulic pressure per the dial gauge, the primary strain gauges give a force of 579 kips. The hydraulic pressure is increased to 3,700

psi and the primary strain gauges give a force of 588 kips. The hydraulic pressure is increased to 3,900 psi and the primary strain gauges give a force of 616 kips. The hydraulic pressure is increased to 4,000 psi and the primary strain gauges give a force of 629 kips. The hydraulic pressure is increased to 4,100 psi and the primary strain gauges give a force of 645 kips. The AE is checked with the ok given at 1032. The nut is tightened. Prior to bleeding off the jacks, the primary strain gauges give a force of 641 kips (bleed loss = 4 kips). After bleeding off the jacks, the primary strain gauges give a force of 594.2 kips (seating loss = 46 kips). The force is within the specified tolerance at 1034 – note that it is within 1 kip of the top end of the tolerance range.

Test Rig #13 (2008 Rod, ID S2-A8, Heat MJF-32, Bottom) Jacking Step:
This is the 7th jacking step and the rod is being jacked to 0.70 Fu. The post-seating of the nut target is 585.060 +10/-0 kips. The expected hydraulic pressure at this locked off force is 3,400 psi. Based on the previous jacking step (0.65 Fu), the expected seating loss is at least 43 kips, meaning the initial jacking target is ~630-640 kips. Jacking is started at about 1035. At 3,400 psi hydraulic pressure per the dial gauge, the primary strain gauges give a force of 582 kips. The hydraulic pressure is increased to 3,800 psi and the primary strain gauges give a force of 622 kips. The hydraulic pressure is increased to 4,000 psi and the primary strain gauges give a force of 648 kips. The AE is checked with the ok given at 1039. The nut is tightened. Prior to bleeding off the jacks, the primary strain gauges give a force of 643 kips (bleed loss = 5 kips). After bleeding off the jacks, the primary strain gauges give a force of about 595.5 kips (seating loss = 47 kips). The force is outside the specified tolerance – it is high by about 0.4 kips. It is noted that the force in the rod typically drops over several minutes after seating the nut. Considering that the rod is a fraction of a kip above the specified tolerance range and will drop to within the tolerance range and technically be acceptable in a few minutes, we leave the rod alone and do not try the risky operation of coming up on the load again to try to loosen it by a fraction of a kip – it is another exposure of personnel to a rod that could break during jacking or nut operations, in order to loosen the nut the load may be taken above the previously jacking load (either unintentionally during jacking targets or intentionally to loosen the nut), and there is risk that lowering the tension level results in the rod being below the specified tolerance range requiring yet another attempt to get in the range. The jacking of the rod is complete at 1043. A few minutes later, the force is within the specified tolerance.

After the tensioning steps at TR's 12 and 13, for the previous load steps, the NaCl Solution flow / air venting steps through the notch in the washers needed to be completed at the wet chambers. This step was done four days ago (after tensioning to 0.60 Fu) and there are no changes to the wet chambers at this dead end, but the DJV has requested that this step be performed every other day regardless. However, the DJV did agree that this step could be skipped if there was an increase in AE activity or when the test steps reach the higher loads. Two days ago, after tensioning to 0.65 Fu, the venting operation was not performed in the interest of safety. Similarly, the operation is not performed again today.

Carol Choi, Godwin Mok, and Doug Williams from the DJV are present in the field in the afternoon between 1530 and 1630 to examine TR's 1-4. They are examining the corrosion inside the dry chamber of the test rig boxes. The insides of the dry chambers were not painted due to limited access during fabrication, but there was NaCl Solution leakage into this portion of the test rigs and some corrosion of the unprotected steel during the Phase 1 testing with TR's 1-4. Since these test rigs will be modified and reused at TR's 14-17 for the Phase 4 testing, the DJV examines the corrosion today. They will evaluate their findings and provide any additional requirements in the future.

A 7kW generator – Whisperwatt 7000 – ABF ID 002343 is on idle/standby at the test rig work area. A 40kW generator – MQ Power 40 – ABF ID 002051 is used to run the hydraulic pump for the jacks for less than an hour. An oxyacetylene torch is on idle/standby at the test rig work area. A compressor – IR P185 ABF ID 000002 is on idle/standby at the test rig work area. A Kubota Cart is used at the test rig work area when the ironworkers arrive for today's tensioning step.

Note that there is k-rail at this work area. Some of the k-rail is rented and addressed by the rental agreement. Some of the k-rail is ABF's k-rail used on site and paid as rented from ABF on a daily basis. To elevate the k-rail, crane mats and timber blocking (12x12's) are in use. The k-rail quantities are as follows:

10’ bought k-rail = 20 pieces
10’ ABF k-rail = 6 pieces
20’ rented k-rail = 10 pieces
20’ ABF k-rail = 15 pieces
Note that this includes three 20’ ABF k-rail between the CCO 314 work area and FW Spencer’s yard, with that k-rail being in place prior to the CCO work and not related to CCO 314. Also a fourth 20’ ABF k-rail is between the CCO 314 work area and FW Spencer’s yard along the fence line near the BayView Trailer.

The agreed extra work with ABF is as follows:
Ironworker Jared Garrett - 1 hr
Ironworker Kyle Crowley - 1 hr
Kubota Cart - 1 hr
40kW Generator - 1 hr
k-rail: 10 pcs @20’ and 4 pcs @10’
Crane Mats (12x12 - 5’x16’) - 4 pcs
Crane Mats (12x12 - 5’x7’) - 15 pcs
See the attached Extra Work Order - Signed with ABF for CCO 314 work

INSPECTOR OT REMARK:

Field and Office 2 hours: Between 1530 and 1630, I meet with the DJV in the field to examine TR’s 1-4 that will be converted for the next phase of testing into TR’s 14-17. I then work with the DJV and CT-METS on various test rig issues. ABF’s shift is 0700 to 1530. My shift is 0700 to 1730 and my OT hours are 1530 to 1730.